

## PATENT ABSTRACTS OF JAPAN

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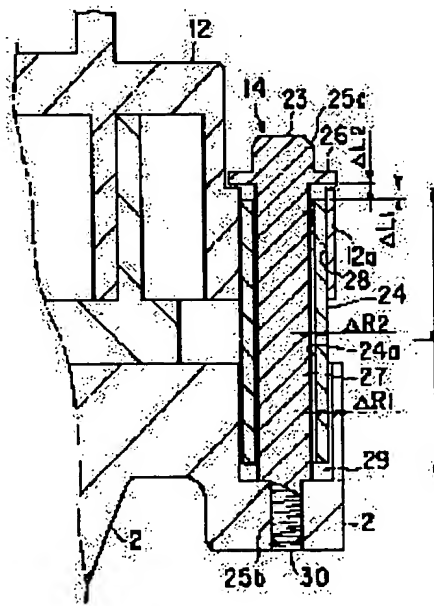
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## (54) SCROLL TYPE COMPRESSOR

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a scroll type compressor which ensures a compliance function, provides high compression efficiency, and improves reliability by suppressing the machining for a fixed scroll and a support frame to the minimum extent and an increase of weight of them.

**SOLUTION:** A scroll type compressor is provided with a back pressure guide means and a support means 14 for compliance function. The support means for compliance function is provided with a support frame 2 which supports a fixed scroll end plate section 12a, a recessed section 29 provided in the support frame, a hollow guide pin 24 which is fitted and fixed in the fixed scroll end plate section, a part of which protrudes from the fixed scroll, and is inserted into the recessed section in play in such a manner that it can slide freely, and a stopper pin 23 which is provided with a rod section 27 which is inserted into a hollow section 24a of the guide pin in play in such a manner that it can slide freely, of which tip is attached and fixed on a face of the recessed section, and regulates the travel of the fixed scroll in the axial direction of the required amount or more.



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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The spiral vane of fixed scrolling and the spiral vane of turning scrolling are meshed. In the scrolling type compressor which forms compression space in these vanes and the end plate section of each scrolling aerofoil, is circled in turning scrolling, inhales compressed gas to compression space, compresses, and carries out the regurgitation. A back pressure advice means to make gas pressure act on the tooth-back side of the above-mentioned fixed scrolling, and to usually regulate migration of the shaft orientations of fixed scrolling by operational status. When the above-mentioned fixed scrolling is supported movable to shaft orientations and compression space changes into the abnormality pressure-up condition exceeding the gas pressure by the back pressure advice means. Permit migration to the shaft orientations of fixed scrolling, and path clearance with turning scrolling is made to be extended. The support means for a compliance function which misses the gas of compression space is provided. The above-mentioned support means for a compliance function. The support frame which supports the periphery part of the above-mentioned fixed scrolling end plate section, and the crevice established in the supporter of the fixed scrolling end plate section of this support frame, Attachment immobilization is carried out at the above-mentioned fixed scrolling end plate section, and the part projects from fixed scrolling. While being loosely inserted in the centrum of the hollow-like guide pin inserted in a crevice, enabling free sliding, and this guide pin free [ sliding ], mounting immobilization is carried out in the above-mentioned support frame crevice side. And the scrolling type compressor characterized by providing the stopper pin which regulates the migration more than the initial complement to the shaft orientations of fixed scrolling.

[Claim 2] It is the scrolling type compressor according to claim 1 which the above-mentioned support frame is \*\*\*\*ed to the above-mentioned crevice side, and is equipped with a pore, and the above-mentioned stopper pin is equipped with the thread part screwed on at that head by the above-mentioned screw-thread pore of the above-mentioned support frame crevice side, and is characterized by this diameter of a screw thread considering as smallness rather than the loose insertion section diameter to the above-mentioned guide pin centrum.

[Claim 3] The above-mentioned stopper pin is a scrolling type compressor according to claim 1 characterized by having the stopper section which is size, and is consisted and prepared in the end face section which projects from a guide pin in a guide pin up edge and a predetermined gap rather than the diameter dimension of a guide pin, and regulates the amount of backs of the shaft orientations of fixed scrolling.

[Claim 4] The scrolling type compressor according to claim 1 with which it is inserted in the hollow circles of the spacer of the shape of hollow set to the above-mentioned stopper pin so that that outer-diameter dimension may be loosely inserted in the centrum of the above-mentioned guide pin, and this spacer, and a head thread part is characterized by consisting of a bolt with which a projection and an end face head project from a spacer up edge, and a washer which intervenes between the end face head of this bolt, and a spacer up edge from the spacer soffit section.

[Claim 5] The spiral vane of fixed scrolling and the spiral vane of turning scrolling are meshed. In

the scrolling type compressor which forms compression space in these vanes and the end plate section of each scrolling aerofoil, is circled in turning scrolling, inhales compressed gas-ed to compression space, compresses, and carries out the regurgitation A back pressure advice means to make gas pressure act on the tooth-back side of the above-mentioned fixed scrolling, and to usually regulate migration of the shaft orientations of fixed scrolling by operational status, When the above-mentioned fixed scrolling is supported movable to shaft orientations and compression space changes into the abnormality pressure-up condition exceeding the gas pressure by the back pressure advice means Permit migration to the shaft orientations of fixed scrolling, and path clearance with turning scrolling is made to be extended. The support means for a compliance function which misses the gas of compression space is provided. The above-mentioned support means for a compliance function The scrolling type compressor characterized by equipping one place with an advice means to show the above-mentioned fixed scrolling to shaft orientations when compression space changes into an abnormality pressure-up condition, and a regulation means to regulate the migration more than the initial complement of fixed scrolling at this time, collectively.

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[Translation done.]

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the scrolling type compressor used as a compressor which constitutes the refrigerating cycle of an air conditioner.

[0002]

[Description of the Prior Art] In the compressor which constitutes the refrigerating cycle of an air conditioner, as compared with the usual rotary system compressor, the operation noise is very low, and by needlessness, such as a suction valve and a discharge valve, there are few components mark, and they end, and it is in the inclination for the good scrolling type compressor of compressive ability to be used abundantly moreover.

[0003] Conventionally, as shown in drawing 5, a scrolling type compressor meshes the spiral vane of the fixed scrolling A, and the spiral vane of the turning scrolling B, forms the compression space a in these vanes and the end plate section of each scrolling aerofoil, makes it circle in the turning scrolling B, and inhales, compresses and carries out the regurgitation of the refrigerant gas which is compressed gas-ed to the compression space a.

[0004]

[Problem(s) to be Solved by the Invention] By the way, the compression space a of this scrolling type compressor is not necessarily in the always normal pressure condition. For example, in liquid back operation which absorbs and compresses liquid cooling intermediation, the compression space a lapses into an abnormality pressure-up condition. if this condition carries out long duration continuation -- the big stress to each scrolling vane -- starting -- just -- being alike -- there is a possibility of fracturing.

[0005] Then, when the fixed scrolling A was supported movable to shaft orientations and compression space changed into the abnormality pressure-up condition recently, the so-called compliance function which is made to expand a gap with turning scrolling and missed gas came to be adopted.

[0006] However, since the fixed scrolling A must hold the turning scrolling B and the usual path clearance in the usual operational status, the configuration which the fixed scrolling A is supported [ configuration ] free [ migration to shaft orientations ], and produces gas pressure in the tooth-back side of the fixed scrolling A is common.

[0007] As shown also in this drawing, the support device C over the fixed scrolling A in which a compliance function is made forms two or more hanging holes b in the support frame D which supports the fixed scrolling A, and is inserting the guide pin d which projects from the fixed scrolling A in these hanging hole b.

[0008] Moreover, the hollow-like spacer e is loosely inserted in the fixed scrolling A, and this soffit section appears on the support frame D. Bolt f is inserted in the centrum of Spacer e, and this head thread part is screwed on the support frame D. Washer w is inserted in the upper bed head of Bolt f, and it intervenes between the above-mentioned spacer e up edges.

[0009] The tooth-back side of the fixed scrolling A is equipped with the intermediate pressure room g, and gas pressure is made to act here. Usually, although migration of the shaft orientations of the fixed scrolling A is regulated in operational status, when an unusual pressure

buildup arises to the compression space a, a guide pin d guides the fixed scrolling A along with the hanging hole b, makes a gap with the turning scrolling B expand, and misses gas.

[0010] The so-called compliance function is demonstrated and it prevents that big stress starts the vane of each scrolling A and B. A bolt f head regulates the movement magnitude (the amount of backs) of the fixed scrolling A through Washer w.

[0011] Thus, although a positive compliance function is made, processing takes time and effort from the place in which a means to guide the fixed scrolling A, and a means to regulate the amount of backs are formed independently on the other hand.

[0012] That is, the bolt f which regulates the amount of backs, the pore which attaches Spacer e, and a screw-thread pore need the hole for anchoring of a guide pin d, to form the hanging hole b, and to be hole processed for the fixed scrolling A and the support frame D, and manday increases.

[0013] And in order to prepare these pores, the fixed scrolling A and the flange area of the support frame D are mostly needed. The weight of the part, the fixed scrolling A, and the support frame D increased, and it has had an adverse effect on cost.

[0014] when this invention be make paying attention to the above-mentioned situation , and the place make into the object make the minimum fixed scrolling and processing to a support frame , and these weight buildups be control and an unusual pressure buildup arise to compression space , the so-called compliance function which support fixed scrolling movable to shaft orientations smoothly tend to secure , and it be going to provide the scrolling type compressor which can obtain in improvement in high compression efficiency and dependability .

[0015]

[Means for Solving the Problem] In order to satisfy the above-mentioned object the scrolling type compressor of the 1st invention As claim 1, the spiral vane of fixed scrolling and the spiral vane of turning scrolling are meshed. In what forms compression space in these vanes and the end plate section of each scrolling aerofoil, is circled in turning scrolling, inhales compressed gas-ed to compression space, compresses, and carries out the regurgitation A back pressure advice means to make gas pressure act on the tooth-back side of the above-mentioned fixed scrolling, and to usually regulate migration of the shaft orientations of fixed scrolling by operational status, When the above-mentioned fixed scrolling is supported movable to shaft orientations and compression space changes into the abnormality pressure-up condition exceeding the gas pressure by the back pressure advice means Permit migration to the shaft orientations of fixed scrolling, and path clearance with turning scrolling is made to be extended. The support means for a compliance function which misses the gas of compression space is provided. The above-mentioned support means for a compliance function The support frame which supports the periphery part of the above-mentioned fixed scrolling end plate section, and the crevice established in the supporter of the fixed scrolling end plate section of this support frame, Attachment immobilization is carried out at the above-mentioned fixed scrolling end plate section, and the part projects from fixed scrolling. It is characterized by providing the stopper pin which mounting immobilization is carried out in the above-mentioned support frame crevice side while being loosely inserted in the centrum of the hollow-like guide pin inserted in a crevice, enabling free sliding, and this guide pin free [ sliding ], and regulates the migration more than the initial complement to the shaft orientations of fixed scrolling.

[0016] As claim 2, the above-mentioned support frame according to claim 1 is \*\*\*\*ed to the above-mentioned crevice side, and is equipped with a pore, the above-mentioned stopper pin is equipped with the thread part screwed on at that head by the above-mentioned screw-thread pore of the above-mentioned support frame crevice side, and this diameter of a screw thread is characterized by considering as smallness rather than the diameter of the loose insertion section to the above-mentioned guide pin centrum.

[0017] As claim 3, rather than the diameter dimension of a guide pin, the above-mentioned stopper pin according to claim 1 is size, and a guide pin up edge and a predetermined gap are consisted and established in the end face section which projects from a guide pin, and it is characterized by having the stopper section which regulates the amount of backs of the shaft orientations of fixed scrolling.

[0018] As claim 4, it is inserted in the hollow circles of the spacer of the shape of hollow set to the above-mentioned stopper pin according to claim 1 so that that outer-diameter dimension may be loosely inserted in the centrum of the above-mentioned guide pin, and this spacer, and a head thread part is characterized by consisting of a washer with which a projection and a end face head intervene between the bolt which projects from a spacer up edge, and the end face head of this bolt and a spacer up edge from the spacer soffit section.

[0019] In order to satisfy the above-mentioned object the scrolling type compressor of the 2nd invention As claim 5, the spiral vane of fixed scrolling and the spiral vane of turning scrolling are meshed. In what forms compression space in these vanes and the end plate section of each scrolling aerofoil, is circled in turning scrolling, inhales compressed gas-ed to compression space, compresses, and carries out the regurgitation A back pressure advice means to make gas pressure act on the tooth-back side of the above-mentioned fixed scrolling, and to usually regulate migration of the shaft orientations of fixed scrolling by operational status, When the above-mentioned fixed scrolling is supported movable to shaft orientations and compression space changes into the abnormality pressure-up condition exceeding the gas pressure by the back pressure advice means Permit migration to the shaft orientations of fixed scrolling, and path clearance with turning scrolling is made to be extended. The support means for a compliance function which misses the gas of compression space is provided. The above-mentioned support means for a compliance function It is characterized by equipping one place with an advice means to show the above-mentioned fixed scrolling to shaft orientations when compression space changes into an abnormality pressure-up condition, and a regulation means to regulate the migration more than the initial complement of fixed scrolling at this time, collectively.

[0020] By [ of a more than ] solving and having The means for solving a technical problem, by invention of claim 1, while being able to aim at fixed scrolling and reduction of the processing manday to a support frame, small lightweight-ization can be obtained. And by fitting a guide pin into the crevice of a frame free [ sliding ], the force horizontal to a stopper pin does not need to be applied and the dependability of a compliance function is high.

[0021] In invention of claim 2, shaft-orientations movement magnitude of fixed scrolling can be easily set up with the loose insertion section dimension of a stopper pin. In invention of claim 3, shaft-orientations movement magnitude of fixed scrolling can be easily set up with the stopper means of a stopper pin.

[0022] In invention of claim 4, regulation of the movement magnitude of fixed scrolling can be freely set up with a tubed spacer, and the bolt of a reference standard can be used as it is. In invention of claim 5, while being able to aim at fixed scrolling and reduction of the processing manday to a support frame, small lightweight-ization can be obtained.

[0023]

[Embodiment of the Invention] Hereafter, one example of this invention is explained based on a drawing. The scrolling type compressor used for a freezer at drawing 1 is shown. One in drawing is a sealing case, and the support frame 2 is formed in the upper part within this sealing case 1, and it is supported pivotably for the revolving shaft 3, enabling a free revolution.

[0024] The compression device section 4 mentioned later is connected with the above-mentioned revolving shaft 3, and the motor section 7 which consists of a stator 5 and Rota 6 is formed in the lower part. The soffit section of the above-mentioned revolving shaft 3 projects caudad from the motor section 7, and is supported pivotably free [ a revolution ] by the countershaft carrier 8 attached in the above-mentioned sealing case 1.

[0025] The oil sump section O which \*\*\*\* a lubricating oil is formed in the inner pars basilaris ossis occipitalis of the sealing case 1, and it is immersed here in the soffit section of the above-mentioned revolving shaft 3. Siphon pump P is prepared in the revolving-shaft 3 soffit section, it is sucked up along the oiling path R where the lubricating oil of the oil sump section O is prepared in a revolving shaft 3 with a revolution of a revolving shaft 3, and oiling to each sliding part of the upper bed section compression device section 4 of a revolving shaft 3 is made.

[0026] The above-mentioned compression device section 4 consists of turning scrolling 11 supported by the above-mentioned support frame 2 free [ turning ] through the Oldham ring 10,

fixed scrolling 12 which gears with this turning scrolling 11, and the back-pressure advice means 13 which applies back pressure to this fixed scrolling 12 and the support means 14 for a compliance function support the fixed scrolling 12 movable to shaft orientations under specific conditions.

[0027] The above-mentioned turning scrolling 11 is from spiral vane 11b which protrudes on one on the top-face side of end plate section 11a equipped with boss section 11c about which it negotiates with upper bed eccentricity section 3a of the above-mentioned revolving shaft 3, and this end plate section 11a.

[0028] The above-mentioned fixed scrolling 12 consists of end plate section 12a and spiral vane 12b which protrudes on the underside side of this end plate section 12a at one, and gears with vane 11b of the turning scrolling 11.

[0029] By the end plate sections 11a and 12a and Vanes 11b and 12b of these turning and the fixed scrolling 11 and 12, the compression space a of a couple is formed and incorporate the refrigerant gas which is compressed gas-ed from a peripheral edge section side, while moving to a core side, the volume is made to reduce, and a compression operation can be performed now.

[0030] The top-face section of the above-mentioned fixed scrolling end plate section 12a is formed in the shape of a cavity, and the regurgitation port 15 penetrated so that it may be open for free passage with the whorl core of the above-mentioned compression space a is established in this center section.

[0031] The back pressure plate 16 is formed in the upper part side of the fixed scrolling 12. That is, mounting immobilization is carried out into the sealing case 1, and this back pressure plate 16 divides the interior of a case into upper bed section space and lower space.

[0032] The valve seat section 18 which equipped the axial core with the check valve 17 is formed, and this back pressure plate 16 is open for free passage with the above-mentioned regurgitation port 15. If it puts in another way, the above-mentioned regurgitation port 15 will be open for free passage with back pressure plate 16 upper-part side space through the valve seat section 18 equipped with the check valve 17.

[0033] The high voltage regurgitation room 19 to which the high pressure gas breathed out from the compression space a is led by the cavity prepared in regurgitation port 15 perimeter of the fixed scrolling 12 and the back pressure plate valve seat 18 is formed.

[0034] By such the back pressure plate 16 and the above-mentioned fixed scrolling end plate section 12a, the intermediate pressure room 20 which is the space section by which the seal was carried out is formed. This intermediate pressure room 20 is concentrically established in the periphery enclosure of the above-mentioned high voltage regurgitation room 19.

[0035] The intermediate pressure installation hole 22 penetrates end plate section 12a in the predetermined location of fixed scrolling end plate section 12a, and is prepared in it so that this intermediate pressure room 20 and the above-mentioned compression space a may be opened for free passage. An above-mentioned back pressure advice means 13 to make medium gas pressure always act on the tooth-back side of the above-mentioned fixed scrolling 12 consists of these back pressure plate 16, a high voltage regurgitation room 19, and the intermediate pressure installation hole 22 and the intermediate pressure room 20.

[0036] On the other hand, the support means 14 for a compliance function consists of a stopper pin 23, and the fixed scrolling 12 and the support frame 2 which support a guide pin 24, and these stopper pins 23 and a guide pin 24, as shown also in drawing 2.

[0037] The above-mentioned stopper pin 23 consists of a bolt 25, and a flat washer 26 and the spacer 27 of a hollow barrel, as shown in this drawing right column. A commercial item is sufficient as these bolts 25 and a washer 26, and a commercial item is sufficient as them, as long as the dimension was set up upwards and the hollow-like spacer 27 can also send an overall-length dimension ( $L + \Delta L_2$ ) to accuracy.

[0038] In the above-mentioned bolt 25, thread-part 25b by which the rod part 25a is inserted in flat washer 26 and spacer 27 centrum, and is formed in a soffit projects from a spacer 27 soffit side to a lower part. Bolt-head section 25c projects from a spacer 27 up end face with a washer 26.

[0039] The stopper pin 23 in the condition of having united the above-mentioned bolt 25, the



washer 26, and the spacer 27 with the left column topmost part of this drawing is shown. In addition, a bolt 25 and a flat washer 26 do not need to require the time and effort which looks for each part article at the time of an assembly, if it unifies with means, such as welding, mutually.

[0040] The above-mentioned guide pin 24 consists of a hollow barrel. The centrum 24a diameter of this guide pin 24 is formed to some extent in size rather than the dimension of the spacer 27 which constitutes the rod part of the above-mentioned stopper pin 25.

[0041] Flange 12c is prepared in the above-mentioned perimeter of fixed scrolling end plate section 12a at one, and the hole 28 for mounting is penetrated and formed in this predetermined location in accordance with shaft orientations. The diameter of this hole 28 for mounting is formed somewhat smaller than the outer-diameter dimension of the above-mentioned guide pin 24.

[0042] The periphery of the above-mentioned support frame 2 is supporter 2a which supports the fixed scrolling 12, and a crevice 29 is established in this predetermined location. Opening of the effective area of this crevice 29 is carried out to the above-mentioned supporter 2a, and it is formed in the predetermined depth in accordance with shaft orientations.

[0043] And a supporter 2a base is covered from the base of a crevice 29, it \*\*\*\*\* in accordance with shaft orientations, and a pore 30 is formed. The diameter of a screw thread of this screw-thread pore 30 is in agreement with the diameter of a screw thread of the above-mentioned bolt thread-part 25b.

[0044] The support means 14 for a compliance function which consists of such a component part is assembled as shown also in drawing 3. Mounting immobilization of the guide pin 24 is carried out with means, such as press fit, at the hole 28 for mounting prepared in fixed scrolling end plate section 12a. The upper bed edge of a guide pin 24 is [ as opposed to / at this time / an end plate section 12a top face ]  $\Delta L1$ . It is set up so that only a dimension may cave in.

[0045] While including the revolving shaft and the turning scrolling 11 which are not illustrated here in the support frame 2, support immobilization of the fixed scrolling 12 is carried out. The guide pin 24 which projects from a mounting eclipse and a fixed scrolling underside in the fixed scrolling 12 at this activity and coincidence is inserted into the crevice 29 in which it was prepared by the support frame 2.

[0046] The dimension of a guide pin 24 is  $\Delta R1$  in the condition of being smallness and having inserted rather than the diameter dimension of a crevice 29. A clearance is formed. Namely, a guide pin 24 is inserted in a crevice 29, enabling free sliding.

[0047] The stopper pin 23 with which the bolt 25, the flat washer 26, and the tubed spacer 27 which were previously explained to centrum 24a of the above-mentioned guide pin 24 were unified is inserted, and this head thread-part 25b is screwed in by the screw-thread pore 30 formed successively by the above-mentioned crevice 29.

[0048] That is, mounting immobilization of the stopper pin 23 is carried out at the support frame 2, the spacer 27 which is the rod part of a parenthesis is inserted in at centrum 24a of a guide pin 24, and upper bed head 25c and washer 26 part project from a turning scrolling end plate section 12a top face.

[0049] And rod part 27 diameter of a stopper pin 23 is  $\Delta R2$  in the condition of it having been smaller than the guide pin centrum 24a diameter, and having inserted. A clearance will be formed and a stopper pin 23 will be loosely inserted in a guide pin 24 free [ sliding ].

[0050] It is the gap dimension  $\Delta L2$  between the washers 26 which constitute the stopper section of a fixed scrolling end plate section 12a top face and a stopper pin 23 from this condition by setting the overall-length dimension covering crevice 29 base of the support frame 2 to L from a fixed scrolling end plate section 12a top face. It is formed.

[0051] As again shown in drawing 1, the discharge tube 31 is connected to the up side face of the sealing case 1, and this opens for free passage the up space within the sealing case 1 divided with the back pressure plate 16, and the condenser which a freezer does not illustrate.

[0052] The suction pipe 32 is connected to the lower side face of the above-mentioned sealing case 1, and this opens for free passage the lower space within the sealing case 1 divided with the back pressure plate 16, and the evaporator which a freezer does not illustrate.

[0053] In the scrolling type compressor constituted by carrying out a deer and doing in this way,

if it energizes in the motor section 7 and the compression device section 4 is driven, a low-pressure refrigerant gas will be introduced in the sealing case 1 from a suction pipe 32, and lower part [ plate / 16 / back pressure ] space will be full.

[0054] This refrigerant gas is inhaled at the periphery side of the compression space a formed by the turning scrolling 11 and the fixed scrolling 12. And it is compressed, when it is gradually transported to the core of the compression space a with the circular movement of the turning scrolling 11 and space capacity decreases.

[0055] In the place which went up to place constant pressure, it is breathed out from the regurgitation port 15, and the high voltage regurgitation room 19 once \*\*\*\*, and it is breathed out in the up space of the back pressure plate 16. And it is led to an external condenser through a discharge tube 31.

[0056] In addition, with a compression operation in the compression space a, the high voltage regurgitation room 19 is once full of the high-pressure refrigerant gas breathed out from the regurgitation port 15, and it applies high-pressure back pressure to the center section of the fixed scrolling 12.

[0057] Furthermore, the gas of intermediate pressure is led to the intermediate pressure room 20 through the intermediate pressure installation hole 22 from the compression space a, it is full here, and the back pressure of intermediate pressure is applied to the peripheral edge section of the fixed scrolling 12.

[0058] Thus, in the usual operational status, the back pressure advice means 13 applies back pressure effective for the fixed scrolling 12. Although the fixed scrolling 12 is supported movable by the support means 14 for a compliance function to shaft orientations, it holds the path clearance which migration to shaft orientations is regulated and forms the compression space a with the turning scrolling 11 according to an operation of the above-mentioned back pressure advice means 13 in the optimal condition.

[0059] Depending on a service condition, liquid cooling intermediation may be absorbed to the compression space a, and pressure up is carried out to abnormality high voltage at this time. The pressure of the compression space a exceeds rather than the back pressure of the back pressure advice means 13, and the fixed scrolling 12 moves to shaft orientations.

[0060] If it furthermore states, the path clearance of the compression space a which will be guided in the crevice 29 established in the support frame 2, and will come floating, consequently is formed by the turning scrolling 11 will expand the guide pin 24 united with the fixed scrolling 12.

[0061] The abnormality high pressure gas of the compression space a escapes into the sealing case 1, the so-called compliance function is demonstrated, and the stress of each scrolling 11 and 12 which especially the vanes 11b and 12b receive is canceled.

[0062] the fixed scrolling 12 under compression operation makes the pressure of extent (it does not come floating) which the fixed scrolling 12 does not move to shaft orientations to the thrust force generated in shaft orientations in the compression space a act on fixed scrolling 12 tooth back — being sufficient .

[0063] And although it is as having mentioned above that a compliance function demonstrates when the compression space a becomes abnormality high voltage Difference  $\Delta R1$  of the diameter dimension of the crevice 29 established in the support frame 2 at this time, and the outer-diameter dimension of the guide pin 24 inserted here Setting out, Difference  $\Delta R2$  of the diameter dimension of guide pin centrum 24a, and a stopper pin rod part 27 outer-diameter dimension \*\*\*\* to the radial direction of the fixed scrolling 12 is regulated by setting out at include-angle within the limits which does not check the circular movement of the turning scrolling 11.

[0064] Therefore, there are not \*\*\*\* of the radial direction of the fixed scrolling 12 and generating of a location gap, and the turning scrolling 11 can continue a smooth circular movement. And a stopper pin 23 is the gap dimension  $\Delta L2$  with fixed scrolling end plate section 12a, without interfering in a guide pin 24. Migration in the thrust direction of the fixed scrolling 12 is enabled by within the limits. Migration of the fixed scrolling 12 to the turning scrolling 11 does not need to be made beyond the need, and does not need to have an adverse

effect on the compression efficiency of the compression space a.

[0065] Drawing 4 (A) is the plan of a support frame, and this drawing (B) is a bottom view of fixed scrolling supported here. The hatching part H of each drawing is a part for the required flange in the former, and are the screw-thread pore (support frame) prepared in a part for the flange of a parenthesis, and a hole for pin insertion (fixed scrolling).

[0066] that is, the weight of the flange part H shown by hatching mitigates by adopting fixed scrolling and the support frame of invention which were mentioned above -- having -- and a hole -- processing and screw-thread hole processing become unnecessary, and reduction of manday can be aimed at.

[0067] The above-mentioned scrolling type compressor is not necessarily limited to that with which the device which constitutes a refrigerating cycle is equipped, but also when compressing other compressed gas-ed or air of a class, it can be used.

[0068]

[Effect of the Invention] As explained above, according to invention of claim 1, the lobe of the guide pin by which attachment immobilization is carried out in the fixed scrolling end plate section Insert in the crevice established in the support frame, enabling free sliding, insert a stopper pin in the centrum of this guide pin loosely free [ sliding ], and mounting immobilization of the point is carried out in a support frame crevice side. And since the migration more than the initial complement to the shaft orientations of fixed scrolling was regulated with the stopper pin, while being able to aim at fixed scrolling and reduction of the processing manday to a support frame, small lightweight-ization can be obtained. And by fitting a guide pin into the crevice of a frame free [ sliding ], the force horizontal to a stopper pin does not need to be applied and effectiveness, like improvement in the dependability of a compliance function can be aimed at is done so.

[0069] According to invention of claim 2, it \*\*\*\*s to the crevice side of a support frame, and has a pore, and the head thread part of a stopper pin is screwed on, and since this diameter of a screw thread considered as smallness rather than the loose insertion section diameter to the above-mentioned guide pin centrum, it can set up shaft-orientations movement magnitude of fixed scrolling easily with a stopper pin dimension.

[0070] According to invention of claim 3, rather than the diameter dimension of a guide pin, a stopper pin is size, and a guide pin up edge and a predetermined gap are consisted and established in the end face section which projects from a guide pin, and since it had the stopper section which regulates the amount of backs of the shaft orientations of fixed scrolling, shaft-orientations movement magnitude of fixed scrolling can be set up easily.

[0071] The hollow-like spacer with which a stopper pin is loosely inserted in the centrum of a guide pin according to invention of claim 4, The bolt with which it is inserted in the hollow circles of this spacer, and a projection and a end face head project [ a head thread part ] from a spacer up edge from the spacer soffit section, Since it constituted from a washer which intervenes between the end face head of a bolt, and a spacer up edge, regulation of the movement magnitude of fixed scrolling can be freely set up with a tubed spacer, and the bolt of a reference standard can be used as it is.

[0072] By invention of claim 5, as a support means for a compliance function, since it had collectively an advice means show the above-mentioned fixed scrolling to shaft orientations when compression space changes into an abnormality pressure-up condition, and a regulation means regulated the migration more than the initial complement of fixed scrolling at this time, to one place, while being able to plan fixed scrolling and reduction of the processing manday to a support frame, small lightweight-ization can be obtained.

\* NOTICES \*

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] Drawing of longitudinal section of the scrolling type compressor in which the gestalt of operation of this invention is shown.

[Drawing 2] The block diagram which the support means for a compliance function of the gestalt of this operation disassembled.

[Drawing 3] Drawing of longitudinal section of the support means for a compliance function of the gestalt of this operation.

[Drawing 4] (A) is the top view of a support frame of the gestalt of this operation. (B) is the bottom view of fixed scrolling of the gestalt of this operation.

[Drawing 5] Drawing of longitudinal section of the scrolling type compressor in which the conventional gestalt is shown.

[Description of Notations]

11 [ -- A back pressure guidance means 14 / -- The support means for a compliance function, 2 / -- A support frame, 29 / -- A crevice, 24 / -- A guide pin, 23 / -- Stopper pin. ] -- Revolution scrolling, 12 -- Fixed scrolling, a -- Compression space, 13.

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[Translation done.]

## \* NOTICES \*

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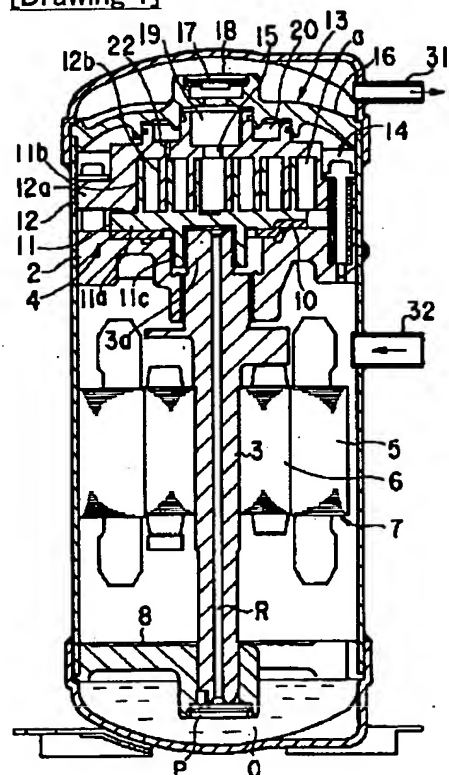
1.This document has been translated by computer. So the translation may not reflect the original precisely.

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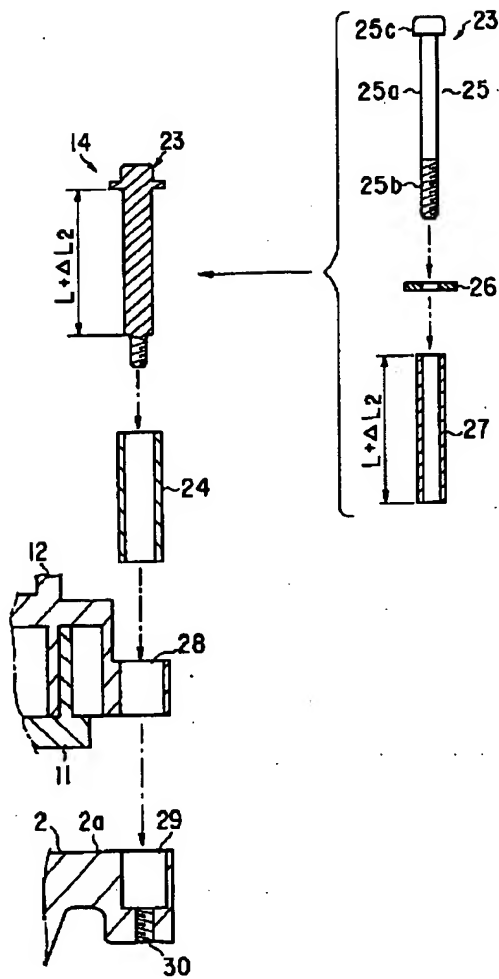
## DRAWINGS

[Drawing 1]

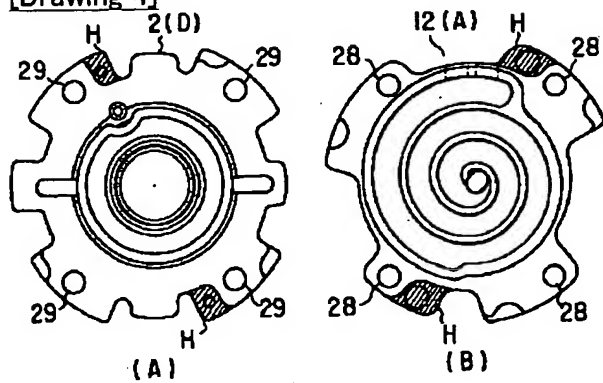


- 2...支持フレーム
- 12...固定スクロール
- 13...高圧案内手段
- 14...コンプライアンス機能用支持手段

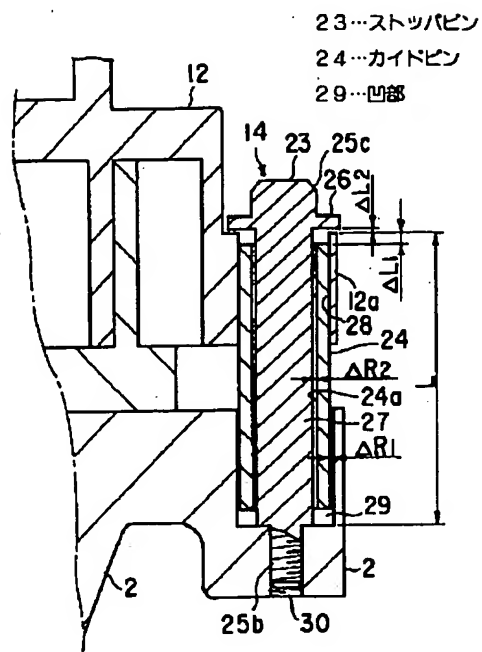
[Drawing 2]



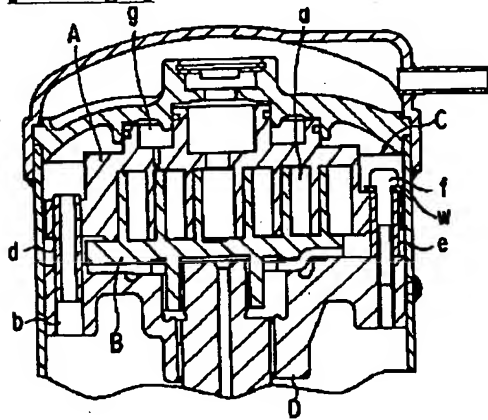
[Drawing 4]



[Drawing 3]



[Drawing 5]



[Translation done.]